

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the above-referenced application.

Listing of Claims:

1.(currently amended) A in-line expansion tank, comprising:

    a pressure assembly having first and second passage fittings providing fluidic communication between an interior and an exterior of the pressure assembly;

    first and second collars sealingly connected to the first and second passage fittings, respectively;

    a resilient diaphragm having first and second ends, wherein the first and second ends are sealingly connected to an exterior of the first and second collars, respectively; and

    a tube retained between the first and second collars and having two ends, wherein one or both ends have a notch providing fluidic communication between an interior of the tube and an interior of the diaphragm, wherein the notch is open to the end of the tube,

    wherein substantially all of a first portion of water entering a space between the diaphragm and the tube leaves the tank before a substantial amount of a second portion of water entering the space between the diaphragm and the tube after the first portion of water enters the space leaves the tank, and before a substantial amount of the first portion of water leaves the tank.

2.(original) The in-line expansion tank of claim 1, further comprising a valve providing controllable fluidic communication between an exterior of the tank and a space between the pressure assembly and the diaphragm.

3.(previously presented) The in-line expansion tank of claim 2, wherein the pressure assembly is metallic and comprises a shell having first and second ends and first and second domes welded to the first and second ends of the shell, respectively, wherein the first and second passage fittings are disposed in a wall of the first and second domes, respectively, and wherein the valve is disposed in a wall of one of the domes or of the shell.

4.(original) The in-line expansion tank of claim 2, wherein the pressure assembly is metallic and comprises first and second domes welded to one another, wherein the first and

second passage fittings are disposed in a wall of the first and second domes, respectively, and wherein the valve is disposed in a wall of one of the domes.

5.(original) The in-line expansion tank of claim 1, wherein a cross-sectional area of the first and second ends of the diaphragm is smaller than a cross-sectional area of a middle portion of the diaphragm.

6.(original) The in-line expansion tank of claim 1, wherein a portion of at least one of said collars has an outer diameter that is approximately equal to an inner diameter of said diaphragm.

7.(original) The in-line expansion tank of claim 1, wherein one or both of the ends of the tube have a plurality of notches.

8.(original) The in-line expansion tank of claim 1, wherein at least a middle portion of the diaphragm is configured to contact the tube at normal operating pressures.

9.(currently amended) An in-line expansion tank, comprising:

a pressure assembly having an inlet and an outlet;

a flow-through assembly having an interior and an exterior and first and second ends sealingly connected to the inlet and outlet, respectively; and

a resilient diaphragm having a middle portion and first and second ends sealingly connected to the flow-through assembly, wherein

the interior diameter of the first and second ends of the diaphragm are smaller than the interior diameter of the middle portion, and

a space between the exterior of the flow-through assembly and the interior of the diaphragm is in fluidic communication with the interior of the flow-through assembly, wherein the flow-through assembly comprises:

first and second collars sealingly connected to the inlet and outlet, respectively; and

a tube retained between the first and second collars and having two ends, wherein one or both ends has a notch providing fluidic communication between an interior of the tube and an interior of the diaphragm,

wherein substantially all of a first portion of water entering a space between the diaphragm and the tube leaves the tank before a substantial amount of a second portion of water entering the space between the diaphragm and the tube after the first portion of water enters the space leaves the tank, and before a substantial amount of the first portion of water leaves the tank.

10.(original) The in-line expansion tank of claim 9, wherein the pressure assembly is metallic and comprises a shell having two ends and first and second domes welded to the shell, wherein the inlet and the outlet each comprise a passage fitting disposed in a wall of one of the domes.

11.(original) The in-line expansion tank of claim 10, further comprising a valve providing controllable fluidic communication between an exterior of the tank and a space between the pressure assembly and the diaphragm, wherein the valve is disposed in a wall of the shell or of one of the domes.

12.(original) The in-line expansion tank of claim 9, wherein the pressure assembly is metallic and comprises first and second domes welded to one another, wherein the inlet and the outlet each comprise a passage fitting disposed in a wall of one of the domes.

13.(original) The in-line expansion tank of claim 12, further comprising a valve providing controllable fluidic communication between an exterior of the tank and a space between the pressure assembly and the diaphragm, wherein the valve is disposed in a wall of one of the domes.

14.(original) The in-line expansion tank of claim 9, wherein at least a middle portion of the diaphragm is configured to contact the tube at normal operating pressures.

15.(cancelled)

16.(currently amended) The in-line expansion tank of claim 14 15, wherein one or both of the ends of the tube have a plurality of notches.

17.(currently amended) An in-line expansion tank, comprising:

a metallic pressure assembly, comprising:

first and second domes joined to form a chamber by a welded joint; and

first and second fittings attached to the first and second domes, respectively, and adapted and constructed for connection to a plumbing system and providing fluidic communication between an interior and an exterior of the pressure assembly;

a flow-through assembly having an interior and an exterior and first and second ends sealingly connected to the first and second fittings, respectively; and

a resilient diaphragm having inlet and outlet ends sealingly connected to the flow-through assembly, wherein a space between the exterior of the flow-through assembly and the interior of the diaphragm are in fluidic communication,

wherein substantially all of a first portion of water entering a space between the diaphragm and the tube leaves the tank before a substantial amount of a second portion of water entering the space between the diaphragm and the tube after the first portion of water enters the space leaves the tank, and before a substantial amount of the first portion of water leaves the tank.

18.(original) The in-line expansion tank of claim 17, further comprising a valve providing controllable fluidic communication between an exterior of the tank and a space between the metallic pressure assembly and the diaphragm, wherein the valve is disposed in a wall of one of the domes.

19.(original) The in-line expansion tank of claim 17, further comprising a shell having first and second ends, wherein the first and second domes are welded to the first and second ends of the shell to form the chamber.

20.(original) The in-line expansion tank of claim 18, further comprising a valve providing controllable fluidic communication between an exterior of the tank and a space between the metallic pressure assembly and the diaphragm, wherein the valve is disposed in a wall of the shell or of one of the domes.

21.(original) The in-line expansion tank of claim 17, wherein the flow-through assembly comprises:

first and second collars sealingly connected to the first and second domes, respectively; and

a tube retained between the first and second collars and having two ends, wherein one or both ends has a notch providing fluidic communication between an interior of the tube and an interior of the diaphragm.

22.(original) The in-line expansion tank of claim 21, wherein one or both of the ends of the tube have a plurality of notches.

23.(original) The in-line expansion tank of claim 17, wherein a cross-sectional area of the first and second ends of the diaphragm is smaller than a cross-sectional area of a middle portion of the diaphragm.

24.(original) The in-line expansion tank of claim 21, wherein a portion of at least one of said collars has an outer diameter that is approximately equal to an inner diameter of said diaphragm.

25.(original) The in-line expansion tank of claim 21, wherein a diameter of the diaphragm is substantially uniform along the diaphragm's length and greater than a diameter of the tube.

26.(original) The in-line expansion tank of claim 17, wherein at least a middle portion of the diaphragm is configured to contact the tube at normal operating pressures.

27.(currently amended) A preassembled water chamber assembly for an expansion tank, comprising:

a tube having first and second ends, at least one end having a notch open to the end of the tube;

first and second collars disposed at the first and second ends of the tube, respectively; and a resilient diaphragm having first and second ends, the diaphragm disposed about the tube and the first and second ends of the diaphragm sealingly fitted around the first and second collars, respectively,

wherein substantially all of a first portion of water entering a space between the diaphragm and the tube leaves the tank before a substantial amount of a second portion of water entering the space between the diaphragm and the tube after the first portion of water enters the space leaves the tank, and before a substantial amount of the first portion of water leaves the tank.

28.(original) The water chamber assembly of claim 27, wherein a cross-sectional area of the first and second ends of the diaphragm is smaller than a cross-sectional area of a middle portion of the diaphragm.

29.(original) The water chamber assembly of claim 27, wherein a portion of at least one of said collars has an outer diameter that is approximately equal to an inner diameter of said diaphragm.

30. (cancelled)

31.(previously presented) The water chamber assembly of claim 27, wherein one or both of the ends of the tube have a plurality of notches.